ASU gets gift of air traffic control simulator

Bradley Rogers, an Arizona State University student from Mesa, knew he wanted to be an air traffic controller since he was in the sixth grade.

"A buddy of mine, his dad was a controller at Sky Harbor. So I was introduced to it early," he said. "Once you're introduced to it, it sticks with you."

Rogers and his fellow students in air traffic management at ASU's Polytechnic campus are getting a new tool to help them hone their skills: an air traffic control simulator that lets them gain "hands-on" experience working at a busy airport without having to endanger anyone's life.

Called the Ottosen Air Traffic Control Simulation Laboratory, it was officially dedicated Thursday.

It was donated to the university by Donald R. Ottosen and family in memory of his father, Donald L. Ottosen, an Arizona aviation pioneer and founder of Ottosen Propeller and Accessories, the oldest continually operating aviation business in the state.

"As a pilot, I understand the important role played by talented and well-trained professionals who can safely manage and control air traffic," the younger Ottosen said in a written statement. "We hope this gift on behalf of our late father is instrumental in helping more students pursue aviation careers as air traffic controllers for years to come."

The lab simulates the scene in the control tower at Phoenix Sky Harbor International Airport and other airports using computer-generated video graphics that can depict various types of airplanes taking off, landing and taxiing.

It also contains a dark room without windows simulating operations at a Terminal Radar Approach Control, or TRACON, facility, which controls air traffic out to 50 miles beyond the airport.
The tower simulator can depict day and night operations, with rain, snow or fog, said simulator manager Verne Latham.

"We can program to have 10 things go wrong in one simulation, and that's equal to three years worth of actual experience," he said. If a mistake is made by the student, the instructor can pause the unfolding scenario and discuss the situation at length, he said.

The system, which was manufactured by Adacel Systems of Orlando, Fla., contains sophisticated capabilities that enhance the realism of the experience. For example, the computer has voice recognition capabilities so a student controller can instruct a pilot to circle around the field, and the graphics will depict the airplane circling the airport.

In the near future the controller simulators will be programmed to interface with airplane cockpit simulators used to train pilots in the same simulator building on the east Mesa campus, giving an added degree of realism to the training of both controllers and pilots.

The lab's technology has an overall value of about $1.5 million, but Adacel Systems supplied the simulators at a much-reduced price, said Keith Hjelmstad, dean of the College of Technology and Innovation.

Even then, a simulation lab seemed out of the financial reach of ASU. "But then I met Don Ottosen and his family, and they changed the equation," Hjelmstad said. "They wanted the best air traffic control program in the country. They grasped the importance of a national problem."

Adacel Vice President Mark Creasap said the company offered the reduced price to support the training of future controllers. Also, the system had already been built for the Federal Aviation Administration, but it was not immediately needed, he said.

"We don't want to be just a vendor," he said. "We want to be a teammate."

He ranked the ASU program as one of the two best in the nation based on the simulator technology and the overall training.

The ASU program is ramping up at a time when many controllers hired in the early 1980s by the Reagan administration as replacements during a controllers' strike are reaching their mandatory retirement age of 56. The FAA will need to hire 1,500 new controllers nationally every year for the next seven to eight years to replace retirees and handle anticipated growth, said John Gilding, support manager for the FAA's Phoenix tower and TRACON operations.

He said use of simulator labs greatly reduces the time needed for on-the-job training when recruits begin actual work in the tower, he said."In simulator labs you can introduce the same complexity and volume of traffic you would get at an actual airport, and if something goes wrong, no one is harmed," he said.

ASU started its four-year air traffic management program in 2007 with three students, and this year the program already has 84 students, Hjelmstad said. With the simulator in place, ASU could enroll up to several hundred, he said.

"With salaries of upward to $100,000 a year, we expect to see dramatic growth," he said.
Although air traffic control is often portrayed as a high-stress occupation, students at the ASU program said they are anxious to get started at a real airport.

"I really like the challenge of it," said Jessica Werner, a senior from Salt Lake City. "I love aviation. I don't fly, so this is a way to be part of it."

Rogers also welcomed the responsibility: "I've heard that as an air traffic controller you have more lives in your hands in one day than a surgeon has in his entire career. Pretty exciting stuff."